Temporary abstinence during dry January: predictors of success; impact on well-being and self-efficacy

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Temporary abstinence during Dry January: Predictors of success; impact on well-being and self-efficacy

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Abstract

Background: Temporary alcohol abstinence conveys physiological benefits. Less well-known are its effects on well-being and general self-efficacy (GSE), and how use of support during alcohol abstinence challenges affects success rates.

Methods: In this study, 4232 adults participating in "Dry January" completed a baseline questionnaire and a 1-month follow-up questionnaire. Key follow-up variables related to whether respondents completed the abstinence challenge, their use of support provided by Dry January, and changes in well-being and GSE. Analyses also examined whether well-being and GSE explained variance in the likelihood of completing Dry January not accounted for by other variables known to be associated with successful attempts at Dry January.

Results: Participation in Dry January was associated with increases in well-being and GSE among all respondents: these changes were larger among people who successfully completed the challenge. In multivariate analysis, greater use of email support was a significant independent correlate of completing Dry January.

Conclusions: This paper adds to growing evidence that support provided through organised abstinence challenges is associated with changes in beliefs linked to harmful drinking. However, there is a need for further research to help us to understand what forms of support are most effective for different drinkers.

Alcohol use is an important contributor to the global burden of disease (Gore et al., 2011; Jones et al., 2008; Rehm et al., 2014, 2017). Excessive alcohol intake increases the risk of acute adverse outcomes such as accidents and injuries, and chronic health conditions including liver disease and cancer (Jones et al., 2008; Hosking & Benger, 2013). Governments in many countries have therefore developed guidelines to help people to manage their alcohol intake (Furtwängler & de Visser, 2013).

In recent years, various organizations in different countries have established campaigns that challenge people to give up alcohol for one month (e.g., au.dryjuly.com, nz.dryjuly.com; www.dryjanuary.org.uk). In the UK, "Dry January" is run by the charity Alcohol Change UK to encourage people to think about the way they drink, and to talk about alcohol. Its popularity is growing: registrations via the website increased from just over 4,000 in 2013 to nearly 60,000 in 2016 (de Visser, Robinson, Smith, Cass & Walmsley, 2017).

The growth of Dry January and other alcohol abstinence challenges has occurred at the same time as the emergence of similar campaigns in other lifestyle domains including diet (e.g., Veganuary: www.veganuary.com) and physical activity (e.g., Move for Movember: uk.movember.com/get-involved/move). For example, "Stoptober" has been effective for supporting smokers to take a one month break from tobacco (Brown, Kotz, Michie, Stapleton, Walmsley & West, 2014; Tieks, Troelstra, Hoekstra & Kunst, 2019). Positive messaging emphasising the benefits of behaviour change (rather than the harms of current behaviour) could be an important part of effective mass-media strategies (Brown et al., 2014). The impact of one-month abstinence challenges, and participants' interest in them, may not be limited to physical well-being: participation may have more fundamental consequences for individuals' self-concepts, changing their perception of the type of person they are in general, and in relation to alcohol (Robert, 2016, 2018; Yeomans, 2019).

Surveys of people who register on the Dry January website show that most report completing the challenge, and that "rebound effects" (i.e., drinking more after a period of abstinence) are less common than those observed following enforced abstinence (Bray et al., 2010), and are much less likely than sustained reductions in intake (de Visser, Robinson & Bond, 2016). A month of alcohol abstinence conveys physiological benefits such as lower liver fat, lower blood glucose, and lower blood cholesterol (Coghlan, 2014; Munsterman et al., 2018). Abstaining for a month also leads to increases in self-reported sleep quality, concentration, and work performance (Coghlan, 2014). However, there is a need to assess how completion of a month without alcohol affects scores on a validated measure of well-being, and how it may be related to a broader range of domains of well-being, including

physical health, energy levels, monetary savings, and weight loss. This is important because such potential benefits are emphasised in promotional material for Dry January.

Successful completion of Dry January is accompanied by increases in Drink-Refusal Self-Efficacy (DRSE), which is a measure of feeling able to refuse alcohol in different contexts (de Visser et al., 2016; Young, Oei, & Crook, 1991). This may occur because participants have opportunities to test and demonstrate their capacity to say “no” to alcohol. It has also been found that reductions in alcohol intake in the months following Dry January are mediated by increases in DRSE during Dry January (de Visser et al., 2016). Given that completion of Dry January is associated with increases in self-efficacy across several domains of alcohol use, it is plausible that completion of the challenge may also be associated with increases in general self-efficacy (GSE: Bandura, 1977), which reflects optimistic self-beliefs about one’s ability to cope with various challenges. However, this possibility has not been tested.

Some characteristics of drinkers predict success in abstinence challenges. People with greater DRSE have been found to be more likely to complete alcohol abstinence challenges (de Visser et al., 2016). Similarly, tobacco smokers attempting to quit have highlighted the important positive influence of three attributes related to self-efficacy: motivation, willpower, and commitment (Smith, Carter, Dunlop, Freeman & Chapman, 2015). Furthermore, in one study of an alcohol abstinence challenge, participants emphasised the value of motivating self-talk for enhancing the likelihood of staying dry (Pennay, MacLean, Rankin & O’Rourke, 2018). One might also expect those who have completed a month of abstinence in the past to be more likely to complete a new abstinence challenge because they have demonstrated their DRSE (Baldwin, Oei & Young, 1993; Oei & Jardim, 2007), but no such association has been found (de Visser et al., 2016). However, there is strong evidence that more moderate drinkers are more likely to complete Dry January (de Visser et al., 2016).

In addition to considering characteristics of individuals, it is important to acknowledge social contextual influences on behavior change. Social support can help people to adhere to health behavior change (Bauld, Bell, McCullough, Richardson & Greaves, 2009; Olander, Fletcher, Williams, Atkinson, Turner & French, 2013). One way to conceptualize social support is as a measure of direct support from specific individuals such as romantic partners, family members, or friends. For example, buddy systems - two people acting as "buddies" to monitor each other and provide mutual support - increase the likelihood of successful health behavior change in contexts such as alcohol use, illicit drug use, smoking, diet, physical activity, and sexual risk (Bauld et al., 2009; Jepson, Harris, Platt & Tannahill, 2010; Lüscher & Scholz, 2017; West & Stapleton, 2008). Although one qualitative study suggested that

social support may help participants in alcohol abstinence challenges (Pennay et al., 2018), registering to do Dry January with another person has not been found to influence success rates (de Visser et al., 2016).

Social support can also be conceptualized as encouragement from sources other than people known personally. Over the years, Dry January has increased the type and amount of support given to registrants via email messages and text/SMS messages (see supplementary file). The campaign organisers also facilitate an online community of supportive participants, and provide health advice and tips from experts. However, it is not known whether registrants who make greater use of such support are more likely to complete the abstinence challenge. There is also a lack of knowledge about participants' perceptions of such support.

Completion of Dry January may be a goal in itself, but as noted above, participation in Dry January has been linked to longer-term increases in DRSE and decreases in alcohol intake (de Visser et al., 2016). Given the known links between excessive alcohol use and adverse health outcomes (Gore et al., 2011; Hosking & Benger, 2013; Jones et al., 2008; Rehm et al., 2014, 2017), reducing alcohol intake should convey health benefits in the longer-term. However, there is no information about the impact of Dry January on general self-efficacy (GSE), or general well-being. This is important because promotion of Dry January emphasizes some benefits of abstinence, but could make broader and stronger claims if supporting evidence were available.

To address the gaps in knowledge identified above, a longitudinal study was conducted with data collection at registration for, and at the end of, Dry January 2016. The first aim was to examine how successful and unsuccessful attempts at Dry January were related to benefits in relation to overall well-being as well as specific aspects of well-being: namely energy, finances, health, sleep, and weight. It was hypothesised that participation in Dry January would be associated with improvements in all of these aspects of well-being, with larger changes for those who successfully completed the challenge. The second aim was to explore how successful or failed attempts at Dry January were related to changes in GSE. It was hypothesized that completion of Dry January would be associated with improvements in GSE and well-being, with smaller changes for those who did not complete the challenge. The third aim was to examine perceptions of the support provided by Dry January, and to determine how important use of support was compared to other variables known to be associated with Dry January completion (i.e., alcohol intake, DRSE, GSE, well-being, past participation, and participation with another person). It was hypothesized that greater use of email support

would be a significant independent multivariate correlate of successfully completing Dry January.

Methods

Participants

The baseline sample consisted of 7642 drinkers aged 18 years or older who had registered on the Dry January website by 5 January 2016. Follow-up data were provided by 4232 people aged 18-76, median = 46, mean = 45.3, s.d. = 11.6) Of these respondents, 74.9% identified as women, 24.4% as men, 0.1% as transgender, and 0.5% did not disclose their gender.

Research Design

The study employed a prospective longitudinal design approved by the host university Research Ethics Committee. All people who registered on the Dry January website were invited to take part via a link to the online survey, which was hosted on a secure server. The home page described the study rationale and methods and outlined consent and data protection procedures. Upon completing the first survey, participants were asked to provide contact details so that they could be sent the URL for the follow-up survey and to be entered into a draw to win £100 (USD125) in store vouchers. The URL for the follow-up survey was sent on the first day of February, with reminders sent after 4 days and 8 days.

Materials

Baseline questionnaire

Respondents completed the 10-item Alcohol Use Disorders Identification Test (AUDIT: Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). The AUDIT assessed alcohol consumption frequency and volume with reference to usual behavior, with no time frame specified. Questions on alcohol dependence and alcohol-related problems were framed with reference to the last year and/or the lifetime. Scale scores were summed, with higher scores indicating a greater likelihood of harmful or hazardous drinking. Respondents also reported the number of times in the last month that they got drunk.

Drink Refusal Self-Efficacy (DRSE) was assessed with nine items (Young et al., 1991), using 7-point scales ("*very difficult*" - "*very easy*"). The scale consisted of three 3-item subscales, each of which was reliable in this sample: social pressure (e.g., "When my friends are drinking", $\alpha = .82$); emotional relief (e.g., "When I am worried", $\alpha = .91$); and opportunistic drinking (e.g., "When I am watching TV", $\alpha = .85$). Mean scale score were used, with higher scores indicating greater DRSE.

A 10-item scale was used to assess general self-efficacy (GSE: Schwarzer & Jerusalem, 1995). Participants used a 4-point scale ("not at all true" - "exactly true") to respond to

statements such as “It is easy for me to stick to my aims and accomplish my goals”. The mean scale score was used, with higher scores indicating greater self-efficacy (α = .91).

Well-being was assessed with the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS), which was developed to enable the monitoring of psychological well-being in the general population and the evaluation of interventions (Stewart-Brown et al., 2011). Participants used a 5-point scale (“none of the time - “all of the time”) to respond to 14 items (e.g., “I’ve been feeling optimistic about the future”). The mean score was calculated, with higher scores denoting better well-being (α = .95).

Participants reported whether they had participated in Dry January in previous years. They also indicated whether they had a companion for Dry January, as indicated by whether they registered for Dry January with any other people.

End-of-month follow-up questionnaire

In response to the question “How many days after registering for Dry January did you have your first alcohol-containing drink?”, participants indicated the number of days from the start of Dry January until they first consumed alcohol. Responses were used to create a dichotomous variable that indicated whether they had successfully completed Dry January.

Respondents completed the GSE scale, and the WEMWBS. They used a 7-point scale (“disagree very strongly” - “agree very strongly”) to indicate whether they had experienced benefits in five domains due to taking part in Dry January: improved health; lost weight; more energy; improved sleep; saved money. Analyses addressed mean scores and the proportion agreeing with each statement (i.e., scores above the scale mid-point of 4).

Respondents were also asked: “Did you opt-in to receive any Dry January support emails?”, and those who did were asked: “Did you read them?” Those who responded “yes” then used a 5-point scale (“occasionally/once” - “every one throughout January”) to respond to the question: “How often did you read the email support you received?” Responses were recoded as a three-category measure of frequency of reading support emails: the “never” group consisted of those who did not sign up to receive emails and respondents who signed up to receive emails but did not read any of them; the “sometimes” group consisted of those who read some of the supportive emails; the “always” group consisted of those who read all of the supportive emails. Samples of supportive messages are provided in the supplementary file.

Respondents used another 5-point scale to respond to the question: “How helpful would you say the email support was in helping you achieve your goal for Dry January?” Respondents who read the messages used a 5-point scale (“strongly disagree” - “strongly agree”) to answer two further questions: “To what extent would you agree that the support

emails provided motivation?" and "To what extent would you agree that the support emails provided useful tips?" Finally, they were asked: "Would you recommend the email support you received to a friend?" Parallel questions were asked about the supportive text/SMS messages.

Analysis

Of the 7642 respondents who completed the baseline questionnaire, 4232 (55%) completed the end-of-month follow-up questionnaire. Table 1 shows significant correlates of completing the follow-up questionnaire. People who completed the follow-up were older, had lower AUDIT scores, reported less frequent drunkenness, had greater DRSE in all three domains, and were more likely to have participated in Dry January in the past. However, the large sample size meant that some of these significant differences did not represent large actual differences or effect sizes. All subsequent analyses were conducted on data weighted to adjust for the likelihood of completion of the follow-up questionnaire. Propensity scores for weighting were calculated using the variables listed in Table 1.

Correlates of completion of Dry January were identified via Analysis of Variance (ANOVA) for continuous variables and χ^2-tests for categorical variables. Multinomial logistic regression analysis was conducted to identify significant independent multivariate predictors of successful completion of Dry January. Analyses of changes between baseline and follow-up were conducted using repeated-measures within-subjects t-tests. Effect sizes were calculated for all analyses: d for ANOVA; φ for χ^2-tests with one degree of freedom; Cramer's V for χ^2-tests with more than one degree of freedom. Effect sizes up to 0.2 can be considered "small", those up 0.5 can be considered "medium". The multiple comparisons needed for hypothesis testing may have inflated Type I error rates, so the significance level was set at $p < .025$ after Bonferroni adjustment of the standard level: i.e., $p < .05 / 2$ outcomes (WEMWBS and GSE).

Results

Participation in Dry January and changes in well-being and self-efficacy

Within-subjects tests revealed that participation in Dry January was related to increases in GSE ($t_{(4145)} = 6.14$, $p < .01$, $d = .12$) and WEMWBS scores ($t_{(4145)} = 20.35$, $p < .01$, $d = .34$) at one-month follow-up. Table 2 shows that among respondents who successfully completed Dry January, there were significant increases in GSE and WEMWBS scores. Among participants who did not successfully complete Dry January, there were significant increases in WEMWBS scores, but not GSE.

The majority of participants reported that they saved money (63%), experienced improved sleep (56%), had more energy (52%), and had better health (50%) at the end of Dry January.

A substantial minority (38%) reported that they had lost weight. Table 3 shows that compared to other Dry January registrants, those who successfully completed the challenge reported significantly greater benefits in all five domains.

Bivariate and multivariate correlates of successful completion of Dry January: the importance of social support

Overall, 61% of respondents reported successfully completing Dry January. Table 4 shows that compared to other participants, those who successfully completed Dry January were more likely to be male, had lower AUDIT scores, reported a lower frequency of drunkenness, had greater DRSE in all three domains, had greater GSE, had greater mental well-being, and were more likely to have read all of the supportive emails offered to them.

Logistic regression was conducted using forward selection of variables correlated with success at $p < .10$. This identified four significant independent predictors of likelihood of success, which correctly classified 63% of participants as successful or not successful ($\chi^2_{(6)} = 174.27$, $p < .01$). Success was significantly predicted by being male rather than female (OR = 1.46; 95%CI = 1.35 - 1.58), having a lower AUDIT score (OR = 0.97, 95%CI = 0.96 - 0.98), having greater emotional DRSE (OR = 1.09; 95%CI = 1.06 - 1.11), and reading supportive emails “always” rather than “never” (OR = 1.81; 95%CI = 1.65 - 1.97).

Overall, 89.0% of respondents opted to receive supportive emails from Dry January, and 89.6% read at least some of the emails send to them. Among these 3256 respondents, 57.6% read every message. Among those who read the messages, the average perceived usefulness of them was 3.94 (s.d. = 0.97) on a 5-point scale. On a similar 5-point scale, the mean rating of how motivating the messages were was 3.53 (s.d. = 1.13) and the mean rating of whether the messages provided useful tips was 3.48 (s.d. = 1.11). The vast majority (83.0%) of people who read the messages said that they would recommend them to people undertaking Dry January. Fewer people (15.5%) opted to receive the supportive text/SMS messages: 87.3% of these people read at least one message, of whom 63.3% read every message. Analyses of correlates of using text/SMS support were not conducted due to the smaller sub-samples.

Discussion

The first and second hypotheses were supported: completion of Dry January was associated with significant improvements in well-being and GSE, with less evidence of beneficial changes among those who did not complete the challenge. In relation to the first aim, it was found that the majority of participants reported improvements in energy, finances, health, and sleep, and these benefits were more likely among people who completed the challenge. This evidence suggests that such benefits can continue to be highlighted in gain-

framed messages (Churchill et al., 2016; Quick & Bates, 2010) promoting of Dry January and similar temporary alcohol abstinence challenges.

In relation to the second aim, improvements in GSE were expected because overcoming challenges can increase general self-efficacy (Bandura, 1977). These findings resonate with the suggestion that the impact of abstinence challenges, and participants' interest in them, may not be limited to physical well-being, and that participation may have more fundamental positive consequences for individuals' self-concept (Robert, 2016, 2018; Yeomans, 2019).

For both successful and unsuccessful participants in Dry January, the observed significant changes generally reflected small-medium effect sizes. However, the findings suggest that even a failed attempt at Dry January is associated with many of the positive changes observed in people who successfully complete it. There is, therefore, value in encouraging people considering a month of abstinence to at least register on the Dry January website, and to emphasise the benefits to physical health, psychological well-being, and self-efficacy (Yeomans, 2019).

There was support for the third hypothesis: along with more moderate alcohol use, being male, and having greater DRSE related to emotional relief, greater use of email support was a significant independent multivariate predictor of successfully completing Dry January. In contrast, social support in the form of a companion or "buddy" did not predict success (de Visser et al., 2016; Bauld et al., 2009; Olander et al., 2013). Studies of other behavior change campaigns suggest that self-motivation, willpower, and commitment are important influences on success rates (Pennay et al., 2018; Smith et al., 2015). However, people also appear to need external support. The results reported here concur with other studies of abstinence from alcohol and other behaviours: the content on campaign websites and the sense of community that they foster may boost and maintain participants' motivation (Pennay et al., 2018; Smith et al., 2015; Yeomans, 2019).

The results presented here suggest that there is value in encouraging people who are considering a month of abstinence in January to register on the Dry January website, so that they may receive the benefits of the support that is offered, rather than hoping that they will undertake it (and complete it) "unofficially". There is also a need to ensure that the support offered to participants is perceived as relevant and that it is helpful.

Although making greater use of email support provided by the organisers of Dry January was a significant independent predictor of the likelihood of completing the abstinence challenge, the possibility of "reverse causation" cannot be ruled out: people who drank alcohol before the end of Dry January may have stopped reading emails. However, this is

unlikely to be the only explanation, because the data in Table 2 show that 62% of people who read none of the emails still managed to complete Dry January. Given that successful completion of Dry January was associated with larger increases in DRSE and mental well-being, there is a need to encourage more people to use the support provided, and for the support provided to be as useful as possible, so that more people can experience the benefits of successful completion of a dry month. Qualitative research could be helpful for exploring the most effective and appealing message content, framing, and medium of delivery.

The analyses presented here focused on the sub-sample of the population that opted in to attempt Dry January. Comparison of Dry January participants to a "control" group would allow analyses of the extent to which the changes observed are unique to Dry January participants, and the likelihood that they are caused by participation in Dry January. Although the data presented here cannot provide definitive proof that the observed changes were caused by Dry January, it is notable that people who completed Dry January had larger improvements in WEMWBS and GSE scores and broader well-being than did people who did not complete it. Such differences would be hard to explain by referring to variables that affected the whole population.

Although this study provides valuable insights into correlates and consequences of completion of a month of abstinence from alcohol, it does have some limitations. The first is that Dry January registrants are self-selected and may not be representative of the general population. However, this may not be a problem if we only want to apply the findings to people like the study participants: i.e., people who are already in the "planning" or "action" phases of behavior change (Ansker, Helgason & Ahacic, 2014; Cadigan, Martens, Arterberry, Smith & Murphy, 2013; Prochaska, DiClemente & Norcross, 1992). Additionally, comparative data are needed to determine whether the sociodemographic profile of Dry January registrants is representative of the general population. Although the reliance on self-report and recall of alcohol use could be considered a limitation (Del Boca & Darkes, 2003), any recall biases would have affected all participants equally, and would not have been a source of bias in within-subjects analyses. Furthermore, we have no data on the longer-term impact of participation in Dry January.

Taken together, the findings suggest that abstinence challenges such as Dry January are associated with changes toward better well-being and healthier beliefs. The findings about the perceived value and impact of email support suggest that for many people - especially people who are already motivated to change their behavior - an email-based support service might be sufficient for changing their drinking. This may be more cost-effective than a full alcohol

treatment service, particularly given that most people who register for Dry January are not dependent drinkers, and may be reluctant to engage with alcohol treatment. However, there is a need to ensure that people with more problematic patterns of alcohol use (as indicated by high AUDIT scores) receive professional support. There is also a need for further research to help us to understand what forms of support are most effective for different drinkers. Overall, the material presented here adds to emerging evidence that the support provided through organised abstinence challenges such as Dry January may be associated with changes in beliefs and behaviours linked to less harmful drinking in the longer term.

References

Ansker, F.G., Helgason, A.R. & Ahacic, K. (2014). The beliefs about pros and cons of drinking and intention to change among hazardous and moderate alcohol users: a population-based cross-sectional study. *European Journal of Public Health, 24,* 566-71. doi: 10.1093/eurpub/cku007

Babor, T.F., Higgins-Biddle, J.C., Saunders, J.B. & Monteiro, M.G. (2001). *The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Care (2nd Edition).* Geneva: World Health Organization.

Baldwin, A.R., Oei, T.P.S. & Young, R. (1993). To drink or not to drink: The differential role of alcohol expectancies and drinking refusal self-efficacy in quantity and frequency of alcohol consumption. *Cognitive Therapy & Research, 17,* 511-30.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84,* 191-215. doi: 10.1037/0033-295X.84.2.191

Bauld, L., Bell, K., McCullough, L., Richardson, L. & Greaves, L. (2009). The effectiveness of NHS smoking cessation services: a systematic review. *Journal of Public Health, 32,* 71-82. doi: 10.1093/pubmed/fdp074

Bray, R. M., Brown, J. M., Pemberton, M. R., Williams, J., Jones, S. B., & Vandermaas-Peeler, R. (2010). Alcohol use after forced abstinence in basic training among United States Navy and Air Force trainees. *Journal of Studies on Alcohol & Drugs, 71,* 15-22. doi: http://dx.doi.org/10.15288/jsad.2010.71.15

Brown, J., Kotz, D., Michie, S., Stapleton, J., Walmsley, M., West, R. (2014). How effective and cost-effective was the national mass media smoking cessation campaign Stoptober? *Drug & Alcohol Dependence, 135,* 52-58. doi: 10.1016/j.drugalcdep.2013.11.003

Cadigan, J.M., Martens, M.P., Arterberry, B.J., Smith, A.E. & Murphy, J.G. (2013). Examining a curvilinear model of readiness to change and alcohol consumption. *Addiction Research & Theory, 21,* 507-515. doi: 10.1093/eurpub/cku007

Churchill, S. Pavey, L., Jessop, D. Sparks, D. (2016). Persuading people to drink less alcohol: the role of message framing, temporal focus and autonomy. *Alcohol & Alcoholism, 51,* 727–733. doi: 10.1093/alcalc/agw033

Coghlan, A. (2014). Our liver vacation: Is a dry January really worth it? *New Scientist* 2014; *2950*: 6-7. downloaded 30 June 2014 from: http://www.newscientist.com/article/mg2212 9502.600-our-liver-vacation-is-a-dry-january-

really-worth-it.html?full=true#.U7J7jrEylws

de Visser, R.O., Robinson, E. & Bond, R. (2016). Voluntary temporary abstinence from alcohol during "Dry January" and subsequent alcohol use. *Health Psychology, 35,* 281-289. doi: 10.1037/hea0000297

de Visser, R.O., Robinson, E., Smith, T., Cass, G. & Walmsley, M. (2017). The growth of "Dry January": promoting participation and the benefits of participation. *European Journal of Public Health, 27,* 929-931. doi: 10.1093/eurpub/ckx124

Del Boca, F.K. & Darkes, J. (2003). The validity of self-reports of alcohol consumption: state of the science and challenges for research. *Addiction,* 98 *(suppl 2),* 1-12. doi: 10.1046/j.1359-6357.2003.00586.x

Furtwängler, N.A.F.F. & de Visser, R.O. (2013) Lack of international consensus in low risk drinking guidelines. *Drug & Alcohol Review, 32,* 11-18. doi: 10.1111/j.1465-3362.2012.00475.x

Gore, F.M., Bloem, P.J.N., Patton, G.C., Ferguson, J., Joseph, V., Coffey, C., Sawyer, S.M. & Mathers, C.D. (2011). Global burden of disease in young people aged 10–24 years: a systematic analysis. *Lancet, 377,* 2093–2102. doi: 10.1016/S0140-6736(11)60512-6

Hoskins, R. & Benger, J. (2013). What is the burden of alcohol-related injuries in an inner city emergency department? *Emergency Medicine Journal, 30,* e21 doi: 10.1136/emermed-2011-200510

Jepson, R., Harris, F., Platt, S. & Tannahill, C. (2010). The effectiveness of interventions to change six health behaviours: a review of reviews. *BMC Public Health, 10,* 538. doi: 10.1186/1471-2458-10-538.

Jones, L., Bellis, M.A., Dedman, D., Sumnall, H. & Tocque, K. (2008). *Alcohol-attributable fractions for England: Alcohol-attributable mortality and hospital admissions*. Liverpool: Centre for Public Health, Liverpool John Moores University.

Lüscher, J. & Scholz, U. (2017). Does social support predict smoking abstinence in dual-smoker couples? Evidence from a dyadic approach. *Anxiety, Stress & Coping, 30,* 273-281. doi: 10.1080/10615806.2016.1270448

Munsterman, I.D., Groefsema, M.M., Weijers, G., ... Tjwa, E.T.T.L. (2018). Biochemical effects on the liver of one month of alcohol abstinence in moderate alcohol consumers. *Alcohol & Alcoholism*; *53,* 435-438. doi: 10.1093/alcalc/agy031

Oei, T.P.S. & Jardim, C. (2007). Alcohol expectancies, drinking refusal self-efficacy and drinking behaviour in Asian and Australian students. *Drug & Alcohol Dependence, 87,* 281-287. doi: 10.1016/j.drugalcdep.2006.08.019

Olander, E.K., Fletcher, H., Williams, S., Atkinson, L., Turner, A. & French, D.P. (2013). What are the most effective techniques in changing obese individuals' physical activity self-efficacy and behaviour: a systematic review and meta-analysis. *International Journal of Behavioral Nutrition & Physical Activity*, *10*(29). doi: 10.1186/1479-5868-10-29

Pennay, A., MacLean, S., Rankin, G. & O'Rourke, S. (2018) Hello Sunday Morning: Strategies used to support temporary alcohol abstinence through participation in an online health promotion programme. *Health Promotion Journal of Australia, 29,* 321-327.

Prochaska, J.O., DiClemente, C.C. & Norcross, J.C. (1992). In search of how people change: Applications to addictive behaviors. *American Psychologist, 47,* 1102–1114. doi: 10.1037/0003-066X.47.9.1102

Quick, B.L. & Bates, B.R. (2010). The use of gain- or loss-frame messages and efficacy appeals to dissuade excessive alcohol consumption among college students: a test of Psychological Reactance Theory. *Journal of Health Communication*, *15*, 603-628. doi: 10.1080/10810730.2010.499593

Rehm, J., Dawson, D., Frick, U., Gmel, G., Roerecke, M., Shield, K.D., Grant, B. (2014). Burden of disease associated with alcohol use disorders in the United States. *Alcoholism: Clinical & Experimental Research*, 38, 1068-1077. doi: 10.1111/acer.12331

Rehm, J., Gmel, G.E., Gmel, G., Hasan, O.S.M., Imtiaz, S., Popova, S., Probst, C., Roerecke, M., Room, R., Samokhvalov, A.V., Shield, K.D. & Shuper, P.A. (2017). The relationship between different dimensions of alcohol use and the burden of disease-an update. *Addiction*, *112*, 968–1001. doi: 10.1111/add.13757

Robert, J. (2016). Temporary sobriety initiatives as public pedagogy: Windows of opportunity for embodied learning. *Health*, *20*, 413-429. doi: 10.1177/1363459315600772

Robert, J. (2018). Meeting the Sober Self, Recognizing the Drinking Self: Back to Baseline Experimentation in Temporary Sobriety Initiatives. *Contemporary Drug Problems*, *45*, 283-302. doi: 10.1177/0091450918769078

Rodd, Z. A., Bell, R. L., Sable, H. J., Murphy, J. M., & McBride, W. J. (2004). Recent advances in animal models of alcohol craving and relapse. *Pharmacology, Biochemistry and Behavior*, *79*, 439–450. doi: 10.1016/j.pbb.2004.08.018

Schwarzer, R. & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In: J. Weinman, S. Wright, & M. Johnston, *Measures in Health Psychology: A User's Portfolio. Causal and Control Beliefs* (pp. 35-37). Windsor, UK: NFER-Nelson.

Smith, A.L., Carter, S.M., Dunlop, S.M., Freeman, B. & Chapman, S. (2015) The views and experiences of smokers who quit smoking unassisted. A systematic review of the qualitative evidence. *PLoS ONE 10(5)*: e0127144. doi:10.1371/journal.pone.0127144

Stewart-Brown, S.L., Platt, S., Tennant, A., … Clarke, A. (2011). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): a valid and reliable tool for measuring mental well-being in diverse populations and projects. *Journal of Epidemiology & Community Health, 65 (Suppl 2)*, a38-a39.

Tieks, A., Troelstra, S.A., Hoekstra, T. & Kunst, A.E. (2019). Associations of the Stoptober smoking cessation program with information seeking for smoking cessation: A Google trends study. *Drug & Alcohol Dependence*, *194*, 97-100. doi: 10.1016/j.drugalcdep.2018.08.040

West, R. & Stapleton, J. (2008). Clinical and public health significance of treatments to aid smoking cessation. *European Respiratory Review, 17,* 199-204. doi: 10.1183/09059180.00011005

Yeomans, H. (2019). New Year, New You: A qualitative study of Dry January, self-formation and positive regulation. *Drugs: Education, Prevention & Policy*, *26*, 460-468. doi: 10.1080/09687637.2018.1534944

Young, R.McD, Oei, T.P.S. & Crook, C.M. (1991). Development of a drinking self efficacy scale. *Journal of Psychopathology & Behavioral Assessment*, *13*, 1-15. doi:10.1007/BF00960735

Table 1 Comparison of baseline characteristics of people who did and who did not complete 1-month follow-up

	Completed follow-up?			
Correlate	**No** (n = 3410)	**Yes** (n = 4232)	**Difference**	**Effect size**
Sex				
female	44.4%	55.6%	$\chi^2_{(2)} = 2.94$, $p = .23$	$V = .02$
male	45.1%	54.9%		
other	55.0%	45.0%		
Age	44.0 (11.4)	46.4 (11.4)	$F_{(1, 7640)} = 85.96$, $p < .01$	$d = .21$
AUDIT	11.11 (7.07)	9.86 (6.75)	$F_{(1, 7640)} = 62.67$, $p < .01$	$d = .18$
Drunk / last month	4.55 (5.85)	3.64 (5.22)	$F_{(1, 7640)} = 51.25$, $p < .01$	$d = .16$
DRSE - social	3.38 (1.75)	3.61 (1.76)	$F_{(1, 7640)} = 33.61$, $p < .01$	$d = .13$
DRSE - emotional	4.08 (1.87)	4.29 (1.85)	$F_{(1, 7640)} = 23.95$, $p < .01$	$d = .11$
DRSE - opportunistic	5.10 (1.66)	5.31 (1.59)	$F_{(1, 7640)} = 32.78$, $p < .01$	$d = .13$
GSE	3.17 (0.52)	3.17 (0.49)	$F_{(1, 7640)} = 0.72$, $p = .79$	$d = .00$
WEMWBS	3.50 (0.77)	3.53 (0.73)	$F_{(1, 7640)} = 4.41$, $p = .04$	$d = .04$
Dry January in past?				
yes	40.4%	59.6%	$\chi^2_{(1)} = 39.99$, $p < .01$	$\varphi = .07$
no	47.7%	52.3%		
Dry January companion?				
yes	45.6%	54.4%	$\chi^2_{(1)} = 3.68$, $p = .06$	$\varphi = .02$
no	43.4%	56.6%		

Table 2 Impact of Dry January on mental well-being (WEMWBS) and General self-efficacy (GSE) at one-month follow-up

	Completed "Dry January"?						
	yes (n = 2560)		no (n = 1612)		**Effects**		
Dependent variable	**Baseline**	**Follow-up**	**Baseline**	**Follow-up**	**Within-subject**	**Between-subject**	**Interaction**
WEMWBS	3.55 (0.73)	3.79 (0.63)	3.46 (0.78)	3.62 (0.68)	$F_{(1,4257)} = 337.35$ $p < .01$ $\eta^2 = .07$	$F_{(1,4257)} = 41.70$ $p < .01$ $\eta^2 = .01$	$F_{(1,4257)} = 14.18$ $p < .01$ $\eta^2 < .01$
GSE	3.19 (0.48)	3.25 (0.45)	3.14 (0.51)	3.14 (0.48)	$F(1,4257) = 27.10$ $p < .01$ $\eta^2 = .01$	$F(1,4257) = 31.86$ $p < .01$ $\eta^2 = .01$	$F(1,4257) = 15.65$ $p < .01$ $\eta^2 < .01$

note: data weighted for probability of completing the follow-up questionnaire

Table 3 Reported benefits of taking part in Dry January*

Correlate	All (n = 4172)	Failed (n = 1612)	Succeeded (n = 2560)	Difference	Effect size
Saved money	5.08 (2.03)	4.92 (2.03)	5.18 (2.02)	$F_{(1,4143)} = 16.50$, $p < .01$	d = .13
Improved sleep	4.36 (2.11)	4.17 (2.07)	4.48 (2.13)	$F_{(1, 4143)} = 21.62$, $p < .01$	d = .15
More energy	4.06 (2.09)	3.88 (2.02)	4.18 (2.13)	$F_{(1, 4143)} = 21.31$, $p < .01$	d = .14
Improved health	3.95 (2.15)	3.80 (2.08)	4.06 (2.19)	$F_{(1, 4143)} = 14.46$, $p < .01$	d = .12
Lost weight	3.71 (2.02)	3.42 (1.88)	3.90 (2.08)	$F_{(1, 4143)} = 58.08$, $p < .01$	d = .24

* 7-point scale (1 = disagree very strongly, 4 = neither, 7 = agree very strongly)

Table 4 Correlates of successful completion of Dry January

	Completed "Dry January"?			
	No	**Yes**		
Correlate	(n = 1612)	(n = 2560)	**Difference**	**Effect size**
Sex				
female	40.8%	59.2%	$\chi^2_{(2)} = 20.62$, $p < .01$	V = .05
male	33.6%	66.4%		
other	57.7%	42.3%		
Age	45.4 (11.5)	45.3 (11.7)	$F_{(1,4170)} = 0.05$, $p = .82$	d = .01
AUDIT	11.48 (7.16)	9.80 (6.77)	$F_{(1,4170)} = 58.68$, $p < .01$	d = .24
Drunk / last month	4.75 (6.24)	3.65 (5.14)	$F_{(1,4170)} = 38.12$, $p < .01$	d = .19
DRSE - social	3.28 (1.69)	3.65 (1.78)	$F_{(1,4170)} = 42.79$, $p < .01$	d = .21
DRSE - emotional	3.94 (1.82)	4.36 (1.86)	$F_{(1,4170)} = 52.12$, $p < .01$	d = .23
DRSE - opportunistic	5.04 (1.65)	5.33 (1.61)	$F_{(1,4170)} = 32.53$, $p < .01$	d = .18
GSE	3.14 (0.51)	3.19 (0.48)	$F_{(1,4170)} = 10.86$, $p < .01$	d = .10
WEMWBS	3.46 (0.75)	3.55 (0.73)	$F_{(1,4170)} = 13.58$, $p < .01$	d = .12
Dry January in past?				
yes	38.5%	61.5%	$\chi^2_{(1)} = 1.17$, $p = .28$	φ = .02
no	40.1%	59.9%		
Dry January companion?				
yes	38.4%	61.6%	$\chi^2_{(1)} = 0.80$, $p = .37$	φ = .01
no	39.7%	60.3%		
Frequency of reading support emails				
never	43.9%	61.5%	$\chi^2_{(2)} = 59.13$, $p < .01$	V = .08
sometimes	44.1%	59.9%		
always	32.4%	67.6%		

note: data weighted for probability of completing the follow-up questionnaire